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# CENTER for the ENVIRONMENT

Discovery Park



Burton D. Morgan Center for Entrepreneurship



Birck Nanotechnology Center



Bindley Bioscience Center



Gerald D. and Edna E. Mann Hall



Hall for Discovery and Learning Research

- Bindley Bioscience Center
- Birck Nanotechnology Center
- Burton D. Morgan Center for Entrepreneurship
- Discovery Learning Research Center
- **Global Sustainability at Purdue**
  - **Center for the Environment**
  - **Energy Center**
  - **Purdue Climate Change Research Center**
  - **Center for Global Food Security**
  - **Water Community**
- ACCESS: Advanced Computational Center for Engineering and Sciences
  - Cyber Center
  - Rosen Center for Advanced Computing (ITaP)
- Oncological Sciences Center
- Regenstrief Center for Healthcare Engineering

## DISCOVERY PARK

## ABOUT US

**Our Mission:** Promoting *proactive, interdisciplinary* research, learning, and engagement at Purdue *addressing important environmental challenges*.

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## HOW WE ADVANCE OUR MISSION

- ❖ **CONNECTIONS:** Help bring faculty, students, and stakeholders together on important challenges across disciplines.
- ❖ **IMPACT:** Increase public awareness and communication with stakeholders regarding our research on important environmental challenges.
- ❖ **SUPPORT:** Help organize research efforts, and identify and obtain new partners and financial sources of support .

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## RESEARCH FOCUS AREAS

- *Environmental contaminants*
- *Air and water quality*
- *Biodiversity protection*
- *Soundscapes*
- *Sustainable electronics*
- *Building sustainable communities initiative*

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## ENVIRONMENTAL CONTAMINANTS

- Fate and transport of compounds in soil and water
- Bioaccumulation
- Toxicity and remediation
  - *Endocrine disruptors*
  - *Nanomaterials*



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## AIR AND WATER QUALITY

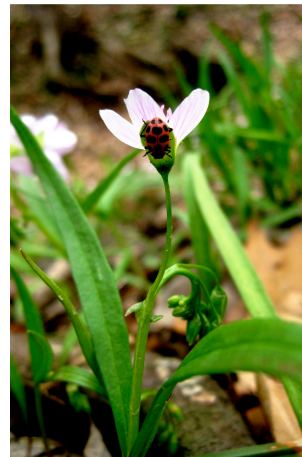
- Measuring, modeling, and testing policies and technologies to address:
  - Air emissions (ALAR)
  - Non-point source water pollution
  - Impacts of biofuel crop production
  - Hydrological impacts of land use and climate change



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## BIODIVERSITY IN MANAGED LANDSCAPES

- Wildlife, insect, and plant communities
- Human dimensions, including farmer and landowner behavior
- Evolutionary, genetic, experimental and field approaches
- Interest in landscapes with substantial human presence



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## SOUNDSCAPE ECOLOGY

- Acoustic analysis for landscape ecologists
- Growing archive of historically and ecologically relevant soundscapes
- Research on soundscape management in National Parks



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## SUSTAINABLE ELECTRONICS

- Lifecycle (LCA) approach to reduce env impact of electronic devices, from manufacture to disposal/recycling
- Social, Environmental, and Economic Perspectives
- NSF IGERT grant with 10 student trainees starting in 2012-13.



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## BUILDING SUSTAINABLE COMMUNITIES

- New Engineering /Liberal Arts Partnership
- How make engineered-social-natural communities more sustainable?
  - Building **resilience** to env disasters and disturbances
  - Human **institutions** and env decision-making
  - Systems of systems, **critical infrastructure**, and network effects



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## IMPACT: CONNECTING OUR SCIENCE WITH STAKEHOLDERS

- ❖ GOAL: Bring latest Purdue env science to decision makers and stakeholders.
- ❖ On and off campus workshops
- ❖ Policy briefs
- ❖ In partnership with GPRI and other campus units

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## 2013 STATE WORKSHOP: Emerging Challenges and Opportunities in Nutrient Management

- Latest research on managing water pollution from farm fields
- 50 attendees
  - State legislators
  - State agency staff
  - Producer organizations
  - Environmental groups
- Co-sponsors
  - Univ. Of Notre Dame
  - State Dept. Of Ag
  - GPRI



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## 2013 CAMPUS WORKSHOP: Unconventional Natural Gas

- Panel of national experts to speak at Purdue on the 'hydraulic fracturing' controversy.
- Co-sponsored with Ecological Sciences and Engineering graduate student program.



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